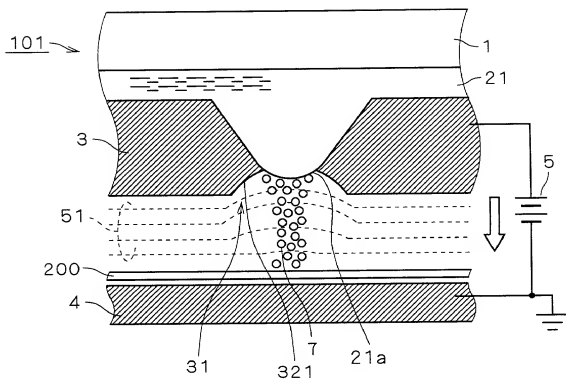
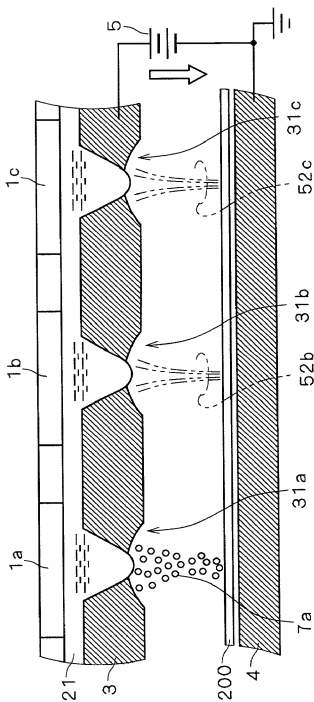


FIG. 1



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F I G . 4

A diagram showing a 3D grid structure. A vertical line on the left is labeled '3'. A horizontal line extends from the top of this vertical line. A bracket labeled '31' spans the horizontal line and the first two rows of circles below it. The first row of circles is labeled '311' and the second row is labeled '312'.

This diagram shows a cross-section of a semiconductor device. A substrate 4 contains a layer 200. Above this is a gate stack 3, which includes a gate dielectric 31 and a gate electrode 32. The gate electrode has a central portion 311 and side portions 312. A trench 21 is formed in the substrate 4, extending from the surface down to the layer 200. The bottom of the trench is labeled 21a. A conductive plug 51 is located at the bottom of the trench. A dashed line indicates the electric field distribution, showing it concentrated in the central portion 311 of the gate electrode. A power supply 5 is connected to the gate electrode 32 and the conductive plug 51.

FIG. 7

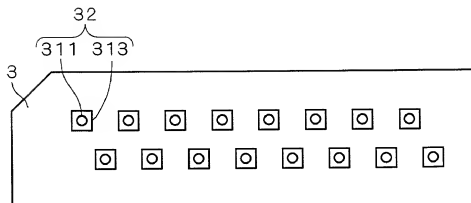
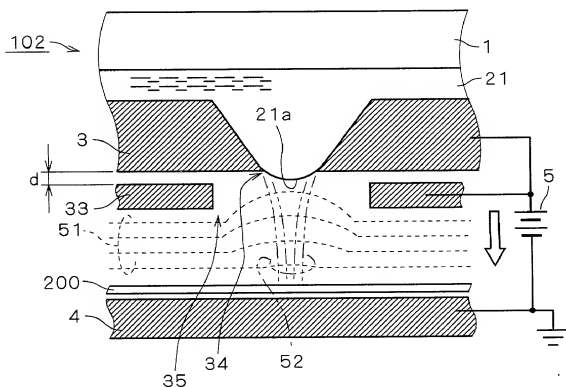


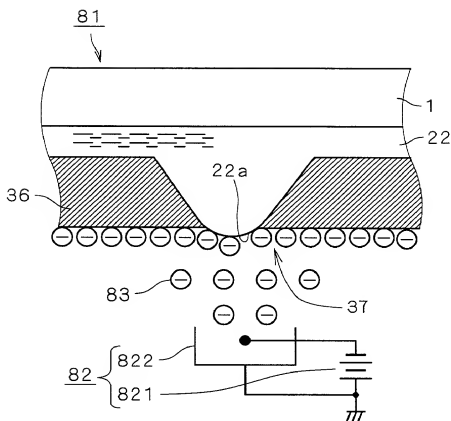
FIG. 8



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F I G . 9

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FIG. 10

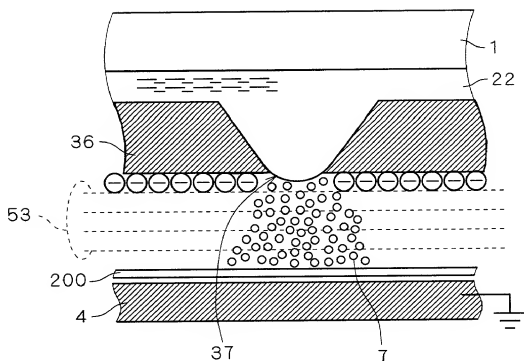


FIG. 11

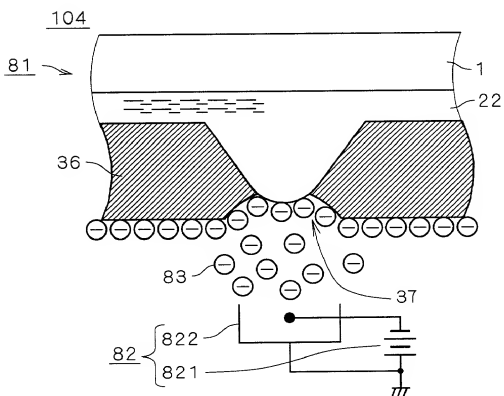


FIG. 12

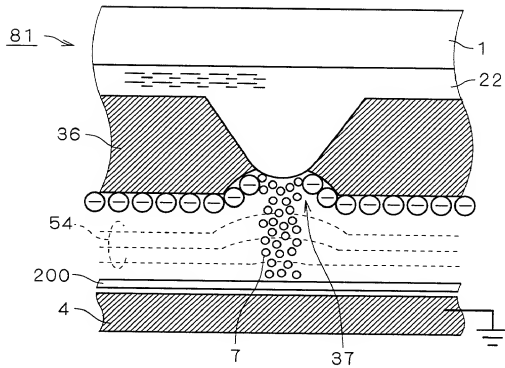


FIG. 13

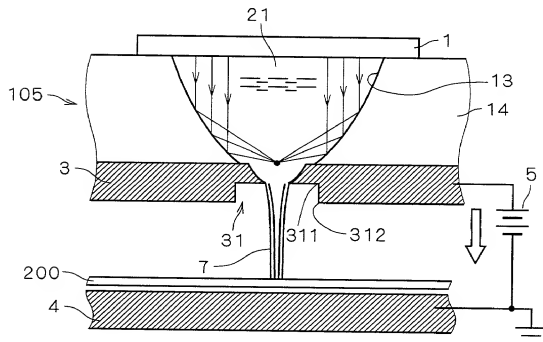




FIG. 14

